

REMARKS

In an Office action dated December 2, 2002, claims 1-9, 11-15 and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hauser '828 in view of Zesch et al., U.S. Patent 6,200,491. Claim 16 was rejected under 35 U.S.C. 103(a) as being unpatentable over Hauser in view of Zesch and further in view of Lloyd et al. U.S. Patent 5,497,763. Although claim 10 was rejected, no basis for the rejection of claim 10 was provided. In response, Applicant submits the following remarks and respectfully requests reconsideration.

In rejecting the claims, it was argued that it would be obvious to use the application of Hauser in the acoustic ink printing structure of Zesch. Zesch describes fabricating microlenses, typically focusing lenses to enable the printing of precisely positioned pixels at a sufficient resolution for high quality printing of complex images. See Zesch col.1, lines 45-48. Although Zesch describes a structure that has similarity with Applicant's invention, Zesch is not interested in creating a mist of pharmaceutical product for inhalation.

Hauser describes creating a mist of pharmaceutical product. The structure of Hauser uses a cavity 14 with a transducer 16 that supplies a frequency between 1 and 5 megahertz (a range well below the 300 Mhz cycles claimed in claim 10). The ultrasonic waves create an 'acoustic fountain' 26 for micropulverization above the openings of the cassette. See Hauser, Col. 2, lines 45-60. However, the method by which Hauser generates a mist of pharmaceutical product is different than the method claimed in claim 1.

Applicant respectfully submits that Zesch in combination with Hauser is insufficient to render independent claim 1, 4, 15 and 16 because a suggestion to combine the references from entirely different applications has not been provided. Furthermore, neither discloses or suggests delivery of a pharmaceutical product by flowing a pharmaceutical product over a plurality of drivers as claimed in all of Applicant's independent claims. As pointed out, the principle by which Hauser delivers a mist of pharmaceutical product is completely different. Hauser generates an acoustic fountain using low frequency acoustic waves. The acoustic fountain is then micro pulverized. Zesch is merely a standard ink printhead to precisely print ink droplets.

Zesch is not interested in generating a mist at all, much less a mist of pharmaceutical products.

Besides the independent claim, Applicant respectfully submits that a prima facie case of obviousness has not been made with respect to a number of dependent claims. For example, none of the references suggest simultaneously providing electrical energy to a plurality of transducers to cause simultaneous ejection of multiple droplets of pharmaceutical product as described in dependent claim 3. None of the references suggests inserting a plurality of drivers into the nose or mouth as claimed in dependent claims 13 and 14. None of the references suggests limiting the time during which a plurality of transducers are activated to approximately a 5 second or less interval as claimed in independent claim 4, the approximate length of time for a long inhalation. Finally, the references do not suggest using a frequency range higher than 300 MHz on a pharmaceutical product as claimed in dependent claim 9 and also in independent claim 10. In fact Hauser teaches away from using such a frequency range by indicating the transducer frequency should be between 1 and 5 MHz as described in Hauser, Col. 2, lines 50-53.

In view of the preceding amendments and remarks, Applicant believes that independent claims 1, 4, 10, 15 and 16 are allowable over the cited prior art references. All remaining claims depend on those independent claims and are thus also believed to be allowable. Additional reasons for allowance have been provided with respect to various dependent and independent claims. Allowance of all pending claims at the Examiner's earliest convenience is hereby respectfully requested. In the event the Examiner considers personal contact advantageous to the disposition of this case, Applicant requests that Examiner contact the undersigned.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE:
IN THE SPECIFICATION:

Please insert the following on page 1, line 3 immediately preceding "Background of the Invention":

Statement of Related Application:

This application is related to U.S. patent application 09/740209 entitled "Inhaler that Uses Focused Acoustic Waves to Deliver a Pharmaceutical Product" also filed December 18, 2000 and assigned to the same assignee.